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EXAMINER	
STRANGE, AARON N	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

MV

Office Action Summary	Application No.	Applicant(s)	
	09/752,464	YAMANAKA, HIDEKI	
	Examiner	Art Unit	
	Aaron Strange	2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-6,8-17,21 and 22* is/are pending in the application.

4a) Of the above claim(s) *12-14 and 22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-11,15-17 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. As noted by Applicant (Remarks, 10), the previous Office action inadvertently indicated that claims 1, 2, 4-6, 8-11, 15-17 and 21 were withdrawn from consideration. In fact, those claims were elected by Applicant and considered in the Office action. Claims 12-14 were withdrawn from consideration, and remain so.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification makes no reference to the term "computer-readable recording medium", which appears in claims 9-11. The Examiner recommends amending the specification to define "computer-readable recording medium" or amending the claims to use the term "portable record medium", described on pages 55-56 of the specification.

Election/Restrictions

3. Newly submitted claim 22 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claim 22 is directed to a method of decreasing cost of a system for relaying communication by using agent relay systems, decreasing a number of relay systems, and adjusting throughputs of communication based on client priority. This method requires none of the protocol

conversion and multiplexing capabilities of the communication relaying methods and systems of the remaining claims.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 22 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Response to Arguments

4. Applicant's arguments filed 10/25/07 have been fully considered but they are not persuasive.

5. With regard to claim 2, and Applicant's assertion that Dillon does not teach "any changing of a throughput of data based on a priority of a client relative to that of another client" (Remarks 12), the Examiner respectfully disagrees. Dillon discloses that each user has a "service plan or level of service" that "correspond to the user's allowed peak and average data throughput rate" (col. 14, ll. 49-52). Dillon teaches changing the throughput of data based on the throughput threshold associated with each user's account (col. 16, ll. 19-28).

Based on this disclosure, one of ordinary skill in the art would have recognized that each user has a service plan providing them with more or less throughput than other clients. Since the throughput is adjusted to ensure that each user receives the

average throughput associated with their service plan, the throughput of each client is changed relative to all other clients using the system.

It is noted that this type of throughput control is substantially identical to the throughput control disclosed in Applicant's specification (Specification 30-31). In Applicant's specification, throughput values are pre-assigned to individual clients and the throughputs are intentionally controlled by the agent relaying devices (Specification, p. 30, ll. 14-20). It is further noted that nothing in the specification describes controlling throughput "based on what another client pays for", which Applicant appears to assert as a distinguishing feature (Remarks, 13), although it does not appear in the claims.

6. With regard to claim 4, and Applicant's assertion that Toporek fails to teach "an idling time transmitted by a first transmitting module that is based on a resource assigned to the client, and a second transmitting module that transmits data" (Remarks, 13-14), the Examiner agrees that Toporek does not expressly disclose transmitting an "idling time" from the end system to the rate control module.

However, Toporek discloses that a rate control module determines whether to queue content for later delivery or to deliver the content immediately (col. 10, ll. 60-63). Toporek teaches that rate control is implemented by an end system or intermediate system specifying "the maximum bandwidth and burst size it will accept on a connection" (col. 9, ll. 44-47). As disclosed by Applicant, the idling time is simply the window size / maximum download rate (Specification, p. 31, ll. 9-15). In Toporek, the client specifies the windows size (burst size) and the maximum download rate

(maximum bandwidth). To obtain an idling time from Toporek's client specified parameters, which is needed by the rate control module, a division operation must be performed. However, Toporek remains silent regarding where the bandwidth and burst size are converted into an idling for use by the rate control module.

As recently noted by the Supreme Court, "a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely that product [was] not of innovation but of ordinary skill and common sense. " *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, 82 USPQ2d 1385, 1397 (2007). In this case, one of ordinary skill in the art would have known that this calculation must be performed at some calculating device in the system, such as the end system, in order to notify the rate control device of the proper idling time for particular information. Furthermore, one of ordinary skill in the art would have seen a benefit to performing the calculation at the end system, since it would free the rate control device from the burden of calculating the idling time, resulting in a significant reduction in processing load since the rate control device handled rate control for many clients.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1, 2, 4, 5, 6, 8, 16 and 17 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

9. With regard to independent claims 2, 6, 16 and 17, each claim recites a system comprising several modules. Each module of the system (i.e., receiving module, transmitting module, multiplexing module, etc) has been described by Applicant as "software components". Since none of the modules are stored on a memory or other hardware element, the claim encompasses software per se. Since the claim is not limited to statutory subject matter, it is non-statutory.

10. Dependent claims 1, 4, 5 and 8 fail to remedy the above noted deficiency, and are rejected under the same rationale by virtue of their dependency from the above claims.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 2, 6, 10, 11, 16, 17 and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Sridhar et al. (US 6,266,701) in view of Dillon et al. (US 6,473,793).

13. With regard to claim 2, Sridhar discloses a communicating system for relaying a communication between a server and a client, comprising:

a first receiving module capable of (XTP receiver module) (Fig 9, 966) receiving data from a network, the data obtained by:

converting a first protocol (HTTP) at an application layer level, for data transmitted from the client to the server, into a second protocol (modified HTTP) at the application layer level, the second protocol allowing an increase of a data transfer window for a transport layer protocol (XTP supports adjustable sliding windows) (at least Col 7, Lines 51-53; maintenance of the bandwidth-delay product to window size ratio requires a changing window size; also see Col 16, Line 63 to Col 17, Line 20) , so that a larger amount of data to be transmitted at one time than with a data transfer window whose size is not increased (Col 5, Lines 4-22), and by

multiplexing data of multiple connections so that a connection with an increased window size in the transport layer protocol level can be used continuously and the larger amount of data is transmitted to the network by continuously using the second protocol (Col 12, Lines 25-45);

a demultiplexing module capable of demultiplexing the received data (Col 18, Lines 2-7);

a first converting module capable of converting a protocol of the demultiplexed data into the first protocol (communication on the gateway->server segment is the original protocol, HTTP over TCP)(Col 9, Lines 37-39);

a first transmitting module capable of (TCP transmitter module) (Fig 9, 948) transmitting the data converted by said first converting device to the server (data is forwarded to the server over the TCP portion of the link)(Col 9, Lines 37-39 and Col 11, Lines 23-25);

a second receiving module capable of (TCP receiver module) (Fig 9, 936) receiving data transmitted from the server to the client (Col 11, Lines 33-35);

a second converting module capable of converting the first protocol of the data received by the second receiving module into the second protocol (data is converted into modified HTTP over XTP for transmission between the gateways) (Col 9, Lines 30-36);

a multiplexing module capable of multiplexing data of multiple connections converted by said second converting device so that a connection using the increased window size in the transport layer protocol level can be used continuously and the larger amount of data cane be transmitted(Col 12, Lines 25-45 and Col 18, Lines 2-7); and

a second transmitting module capable of (XTP transmitter module)(Fig 9, 976) transmitting the data multiplexed by said multiplexing module to the network (Col 11, Lines 33-35).

Sridhar fails to disclose that a throughput of the client is changed corresponding to a priority of the client.

Dillion discloses a similar system for controlling throughput on a network. Dillon teaches changing a throughput of a client according to a priority (level of service) of the client (at least Col 14, Lines 49-52; Col 16, Lines 19-28) relative to that of another client

(each client has a service level that is maintained and provides them with relatively higher or lower average throughput)(Col 14, Lines 49-52). This would have been an advantageous addition to the system disclosed by Sridhar since it would have allowed client throughput to be controlled based on a service level of the client ensuring that each client received the appropriate level of service.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to change a throughput of the client corresponding to a priority of the client in order to ensure that each client receives the throughput corresponding to their level of service.

14. With regard to claim 6, Sridhar discloses a communicating system for relaying a communication between a server and a client, comprising:

a first receiving module capable of (TCP receiver module) receiving data transmitted from the client to the server (Col 11, Lines 23-25);

a first converting module capable of converting a first protocol (HTTP) at an application layer level of the received data into a second protocol (modified HTTP) at the application layer, the second protocol allowing an increase of a size of a data transfer window for a transport layer protocol (XTP supports adjustable sliding windows) (at least Col 7, Lines 51-53; maintenance of the bandwidth-delay product to window size ratio requires a changing window size; also see Col 16, Line 63 to Col 17, Line 20), so that a larger amount of data can be transferred at one time than with a data transfer window whose size is not increased (Col 5, Lines 4-22);

a multiplexing module capable of where multiplexing data of multiple connections converted by said first converting module so that a connection with an increased window size in the transport layer protocol level can be used continuously (Col 12, Lines 25-45); and

a first transmitting module capable of (XTP transmitter module) transmitting data multiplexed by said multiplexing device to the network (Col 11, Lines 23-25);

a second receiving module capable of (XTP receiver module) receiving data from the network, the data obtained by converting the first protocol (HTTP) of data transmitted from the server to the client into the second protocol (modified HTTP) and by

multiplexing data of multiple connections (XTP link uses multiplexing) (Col 12, Lines 25-45) so that a connection with in increased window size in the transport layer protocol level can be used continuously, and the larger amount of data transmitted to the network by continuously using the second protocol (data is converted into modified HTTP over XTP for transmission between the gateways) (Col 9, Lines 30-36);

a demultiplexing module capable of demultiplexing the received data (Col 18, Lines 2-7);

a second converting module capable of converting a protocol of the demultiplexed data into the first protocol (the first protocol is used for transmission between the client and the gateway) (Col 9, Lines 27-30);

and a second transmitting module capable of (TCP transmitting device) transmitting the data converted by said converting module to the client (gateway forwards responses to client)(Col 11, Lines 45-49).

Sridhar fails to disclose that a throughput of the client is changed corresponding to a priority of the client.

Dillion discloses a similar system for controlling throughput on a network. Dillon teaches changing a throughput of a client according to a priority (level of service) of the client (at least Col 14, Lines 49-52; Col 16, Lines 19-28) relative to that of another client (each client has a service level that is maintained and provides them with relatively higher or lower average throughput)(Col 14, Lines 49-52). This would have been an advantageous addition to the system disclosed by Sridhar since it would have allowed client throughput to be controlled based on a service level of the client, ensuring that each client received the appropriate level of service.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to change a throughput of the client corresponding to a priority of the client in order to ensure that each client receives the throughput corresponding to their level of service.

15. Claims 10 and 16 recite substantially identical subject matter to claim 2 and are rejected under the same rationale. Any differences between the claims do not result in patentably distinct claims and all of the limitations are taught by the above cited art.

16. Claims 11 and 17 recite substantially identical subject matter to claim 6 are rejected under the same rationale. Any differences between the claims do not result in patentably distinct claims and all of the limitations are taught by the above cited art.

17. With regard to claim 21, Sridhar discloses a method of relaying communication between a server and a client, comprising:

converting a first protocol (HTTP) in an application layer level of data transmitted from the client to the server into a second protocol (modified HTTP) in the application layer level where a size of a data transfer window in a transport protocol level can be changed (XTP supports adjustable sliding windows) (at least Col 7, Lines 51-53; maintenance of the bandwidth-delay product to window size ratio requires a changing window size; also see Col 16, Line 63 to Col 17, Line 20) , the second protocol allowing a larger amount of data to be transmitted at a time (Col 5, Lines 4-22); and

multiplexing data of multiple connections so that a connection with a changed window size in the transport protocol level can be used continuously (Col 12, Lines 25-45);

Sridhar fails to disclose that a throughput of the client is changed corresponding to a priority of the client.

Dillion discloses a similar system for controlling throughput on a network. Dillon teaches changing a throughput of a client according to a priority (level of service) of the client (at least Col 14, Lines 49-52; Col 16, Lines 19-28) relative to that of another client (each client has a service level that is maintained and provides them with relatively

higher or lower average throughput)(Col 14, Lines 49-52). This would have been an advantageous addition to the system disclosed by Sridhar since it would have allowed client throughput to be controlled based on a service level of the client, ensuring that each client received the appropriate level of service.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to change a throughput of the client corresponding to a priority of the client in order to ensure that each client receives the throughput corresponding to their level of service.

18. Claims 1, 4, 9, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sridhar et al. (US 6,266,701) in view of Dillon et al. (US 6,473,793) in further view of Toporek et al. (US 6,460,085).

19. With regard to claims 1, 9, and 15, while the system disclosed by Sridhar shows substantial features of the claimed invention (discussed above), it fails to disclose a buffer buffering data transmitted from the server to the client and accelerating data output from the server so as to increase throughput assigned to a connection to the client by the server.

Toporek discloses a similar system in which data transfer is accelerated across an XTP connection. Toporek teaches buffering data transmitted from the server to the client and accelerating data output from the server (Col 7, Lines 27-36) so as to increase a throughput assigned to the connection to the client by the server (Server can

get a linear increase in throughput for an increase in window size) (Col 17, Lines 33-52). This would have been an advantageous addition to the system disclosed by Sridhar since it would have increased the throughput of the connection, resulting in faster downloads for the client.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to buffer data to increase a throughput assigned to the connection, resulting in faster downloads for the client.

20. With regard to claim 4, while the system disclosed by Sridhar shows substantial features of the claimed invention (discussed above), it fails to disclose an idling device performing an idling operation corresponding to an idling time transmitted by said first transmitting module that is based on a resource assigned to the client, wherein said second transmitting module transmits data after the idling operation is completed.

Toporek discloses a similar system and teaches use of a rate control module (second transmitting module) to determine whether to queue content for later delivery or to deliver the content immediately (col. 10, ll. 60-63). Toporek teaches that rate control is implemented by an end system or intermediate system (first transmitting module) specifying "the maximum bandwidth and burst size it will accept on a connection" (col. 9, ll. 44-47). As disclosed by Applicant, the idling time is simply the window size / maximum download rate (Specification, p. 31, ll. 9-15). In Toporek, the client specifies the windows size (burst size) and the maximum download rate (maximum bandwidth). To obtain an idling time from Toporek's client specified parameters, which is needed by

the rate control module, a division operation must be performed. However, Toporek remains silent regarding where the bandwidth and burst size are converted into an idling for use by the rate control module.

As recently noted by the Supreme Court, "a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely that product [was] not of innovation but of ordinary skill and common sense. " *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, 82 USPQ2d 1385, 1397 (2007). In this case, one of ordinary skill in the art would have known that this calculation must be performed at some calculating device in the system, such as the end system, in order to notify the rate control device of the proper idling time for particular information. Furthermore, one of ordinary skill in the art would have seen a benefit to performing the calculation at the end system, since it would free the rate control device from the burden of calculating the idling time, resulting in a significant reduction in processing load since the rate control device handled rate control for many clients.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an idling device to perform an idling operation corresponding to an idling time transmitted by said first transmitting module that is based on a resource assigned to the client, wherein said second transmitting module transmits data after the idling operation is completed, as a means to control the throughput received by clients.

21. Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sridhar et al. (US 6,266,701) in view of Dillon et al. (US 6,473,793) in further view of Kirkby et al. (US 6,671,285).

22. With regard to claim 5, while the system disclosed by Sridhar shows substantial features of the claimed invention (discussed above), it fails to disclose a charging device performing a charging process for a service provider of the server, wherein said charging device receives a request from the client, determines whether or not the request is to be issued to the server, and when the request is to be issued to the server, transferring the request and charging the service provider.

Kirkby teaches a method of charging network users for use of certain network resources. Kirkby discloses that customers (service providers or end users) (Col 5, Lines 7-12) who need wide bandwidth are willing to pay extra for this service (Col 2, Lines 35-40). Since the satellite link disclosed by Sridhar provides significantly higher bandwidth than a terrestrial link, these users would be willing to pay extra to have their data sent over the satellite link. Kirkby further discloses determining whether a request from a client is to be issued to the server since the service provider is charged only for data which is directed toward its' servers (Col 4, Lines 62-65 and Col 5, Lines 8-12) and users have the option of terminating a call if the tariff is judged to be too high (Col 5, Lines 20-30). This requires determining if the request is to be directed as well as the client and server involved in the connection.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a charging device to charge a service provider for bandwidth consumed by packets directed toward its' server(s).

23. With regard to claim 8, which is similar to claim 5, Sridhar fails to specifically disclose a charging device for charging users for use of the network.
Kirkby also discloses that the charging device discussed with regard to claim 5 may also be used to charge users for bandwidth they consume (Col 4, Lines 51-67).

Conclusion

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Strange whose telephone number is 571-272-3959. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Aaron Strange
GAU 2153
1/15/08